STATE ANTIDEGRADATION POLICY

- IMPLEMENTATION GUIDELINES -

Department of Health, Environmental Planning Office

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H.A.R. §11-54-01.1 has been amended to more closely conform to the federal antidegradation policy (40 CFR §131.12). Proposed changes include the addition of text protecting and maintaining water quality necessary for attainment of existing uses; addition of a requirement for agency review and public participation in decision-making procedures whenever economic or social development proposals are likely to lower water quality; and protection of water quality where waters constitute an outstanding resource. These antidegradation implementation guidelines are included in the State's Continuing Planning Process document, most recently approved by EPA in 1991 and revised by HIDOH in 2001.

Although antidegradation policy is not explicitly included in the Clean Water Act (CWA), the concept is consistent with the CWA goal of restoring and maintaining the chemical, physical and biological integrity of the Nation's waters [CWA 101(a)], first appearing in an EPA water quality standards regulation in 40 CFR 130.17 on November 28, 1975. Since 1975, antidegradation policy has been one of three required elements of a water quality standard; the other two are: (1) numeric or narrative criteria; and (2) protected (designated) uses for the water body type to which the criteria apply.

Each state is required to adopt an antidegradation policy consistent with federal policy, which is currently described in 40 CFR 131.12; the corresponding State of Hawaii policy is compiled in H.A.R. Chapter 11-54-01.1. In essence, the policy sets out requirements to be met before taking any action that would lower the quality of the Nation's waters.

GENERAL IMPLEMENTATION POLICY:

Whenever a discharge to any waterbody or segment of a waterbody is subject to NPDES permit requirements or CWA §401 Water Quality Certification, the director shall, when the public notice is issued, specifically request comments on whether any existing uses may be degraded by the permitted activity. If a pollutant is conveyed to a waterbody or segment of a waterbody in polluted runoff (nonpoint source discharges), all reasonable and cost-effective BMPs shall be installed to ensure that existing uses are maintained.

BACKGROUND:

CWA §303(d)(4)(B) requires satisfaction of the antidegradation requirements prior to taking certain actions which would lower water quality. State antidegradation requirements must be as least as stringent as the federal requirement set forth at 40 CFR §131.12.

Current State antidegradation policy closely follows the "Guidance on Implementing the Antidegradation Provisions of 40 CFR 131.12" prepared by the U.S. Environmental Protection Agency (EPA), Region 9, and dated June 3, 1987. The State policy is included in the Continuing Planning Process document, which describes the State's process for administering the CWA in Hawaii. This document was revised in 2001.

The EPA guidance identifies tasks to be performed by states in order to implement 40 CFR §131.12. State decision criteria necessary to define actions which require detailed

economic or water quality impact analyses have been included. The objective of the State policy is to achieve the CWA goals through an integrated approach to water quality management and pollution control based on consistent application of the State antidegradation policy.

Please note that the classification of all inland State surface waters, as described below, is based on the nature of the surrounding land uses, not directly on water quality. This classification system is not comparable to the federal Tier I, II and III water quality-based classification system. Although waters meeting or exceeding water quality standards are more likely to be found in the more remote parts of the state and in upper forested watersheds than in urban or agricultural districts, good-quality waters may also be found in developed areas. The classification of marine waters is also largely land-use related, with Class AA segments bordering less-developed stretches of coastline and Class A segments along the more intensively developed areas.

Single sets of numerical criteria are in effect for different types of waterbodies – streams, estuaries, embayments, open coastal waters, etc., plus site-specific criteria for Pearl Harbor and West Hawaii. Pollutant losses from land use activities are expected to be adequately controlled by regulatory programs and by properly designed and implemented voluntary Best Management Practices so that all waters meet narrative criteria, numeric standards for toxic pollutants, and any applicable physical and chemical criteria for the type of waterbody. Class assignment primarily reflects the protected (designated) uses defined for each class.

CLASSIFICATION OF STATE WATERS:

Class 1(b) and 2(b) Waters (impaired perennial streams only; impaired waters that are not perennial streams are not separately classified at this time):

Classes 1(b) and 2(b) are proposed temporary classes for all perennial streams that drain into estuaries, embayments, and open coastal waters that are currently on Hawai‘i’s CWA §303(d) List of Water Quality-Limited Segments or are tributary to listed waters; other streams identified as impaired through stream surveys and watershed assessments may also be assigned by name and location to the class 1(b) and 2(b) categories. Class 1(b) (impaired) waters extend from stream headwaters, typically in the steep upper forested conservation district, to the boundary of the upper conservation district; Class 2(b) (impaired) waters extend from the conservation district boundary to the seaward point at which salinity chronically exceeds 0.5 ppt

The objective of class 1(b) and 2(b) waters is to identify impaired streams to ensure that they eventually meet water quality standards and support their protected (designated) uses. Perennial streams will be moved from class 1(b) or 2(b) (impaired streams) to either class 1(a) or class 2(a) (unimpaired streams) following EPA-approved removal of the streams or the receiving waters for tributary streams from the CWA 303(d) List of Water Quality-Limited Segments. Class 1(b) and 2(b) waters retain their original Class

1(a) or Class 2(a) protected (designated) uses, even though these uses are not currently being supported.

The State will thoroughly review and comment on any proposed action within these stream corridors that is likely to further degrade water quality, and issue individual permits in cases where the antidegradation analysis shows no further detrimental impacts to water quality are likely. Because water quality in Class 1(b) and 2(b) streams has been determined to be lower than necessary to support protected uses, the requirements of CWA §303(d), 40 CFR 131.10 and other pertinent regulations must also be satisfied, which means that TMDLs will be prepared for these waters.

Class 2(a) (Inland Waters) and Class A (Marine Waters):

40 CFR §131.12(a)(1) requires that existing uses, and the water quality necessary to protect existing uses, be protected and maintained, whether or not such uses are designated uses under the State water quality standards. In cases where water quality is just adequate to support the propagation of aquatic communities and wildlife, and recreation in and on the water, such water quality must be maintained and protected.

Class 1(a) (Inland Waters) and Class AA (Marine Waters):

The State prohibits actions which would lower water quality in waters expected to be of higher quality because they flow through (inland waters) or are adjacent to (coastal waters) national parks, wildlife refuges, and other protected lands. Hawaii's potentially higher quality inland waters are often, but not always, within protected land use categories and are designated as Class 1(a) waters, although this potential may not be realized because of polluted runoff from upstream land use activities.

Higher quality marine waters are designated as Class AA waters. "It is the objective of class AA waters that these waters remain in their natural pristine state as nearly as possible with an absolute minimum of pollution or alteration of water quality from any human-caused source or actions." [H.A.R. §11-54-03(c)(1)] High quality waters are those in which water quality is expected to exceed that necessary to support oceanographic research, propagation of aquatic communities and wildlife, compatible recreation and aesthetic enjoyment. Zones of Mixing are not allowed over coral reefs in Class AA waters or within 1,000 feet from the shoreline if no defined reefs are present [see H.A.R. §11-54-03(c)(1)(B) for full text].

Specific class 1a and class AA waters may be identified as existing outstanding resource waters as research reports become available that contain evidence supporting the conclusion that the chemical, physical and biological characteristics of these waters are of exceptionally high quality. Procedures for identifying these waters include: (1) issuance of a public notice in the form of a "Call For Data" Notice; and (2) data review for completeness of coverage of the area across space and time. The entire area proposed as

an existing outstanding resource water must have been surveyed by qualified scientists over at least a two-year period in the six years preceding the proposal.

ACTIONS REQUIRING ANTIDEGRADATION ANALYSIS:

Antidegradation analysis is triggered by any change in practices that results in increased pollutant loads being delivered to State surface waters. Both point and nonpoint sources of pollution are subject to antidegradation requirements. Hawaii's antidegradation policy is implemented through the NPDES permit program for point sources and through the State's polluted runoff control programs for nonpoint sources. Procedures for managing polluted runoff in Hawaii have only recently been defined [Hawaii's Coastal Nonpoint Pollution Control Program Management Plan (June, 1996), and Implementation Plan for Polluted Runoff Control (July, 2000)]. EPA policy, first issued as SAM-32 on November 14, 1978, states that where applicable water quality standards are not met, cost-effective and reasonable BMPs should be applied in an iterative process to improve water quality to the point that standards are attained and protected uses maintained.

The State has broad authority to regulate polluted runoff, and will continue to adopt procedures which adequately assure that sources of polluted runoff comply with the antidegradation requirements of 40 CFR 131.12.

Permit Actions:

1. Issuance/re-issuance/modification of NPDES permits;
2. Issuance of variances (e.g., 301(h), 301(m), etc.)
3. Issuance of CWA §404 permits;
4. Adoption or alteration of mixing zones;
5. Relocation of discharge;
6. Commencement of discharge from a new location and/or a new or expanded source; and
7. Increases in the discharge of pollutants from point sources due to:

a) Industrial production increases;
b) Municipal growth; and
c) New and/or expanded sources

Water Quality Standards/Wasteload Allocation Actions:

1. Revision of water quality standards;
2. Revision of wasteload allocations;
3. Reallocation of abandoned loads;
4. CWA §401 Water Quality Certifications (e.g., as required for U.S. Army Corps of Engineers' dredge and fill permits);
5. Water Quality Management Plan approvals [CWA §208]
6. Total Maximum Daily Load (TMDL) approvals [CWA §303(e)]

Polluted Runoff (Nonpoint Source Pollution) Actions:

(Responses to actions 1-3, below, are to be conducted in accordance with the State's nonpoint source pollution control plans - "Coastal Nonpoint Pollution Control Program Management Plan, Volume 1, 1996"; prepared by the Hawaii Coastal Zone Management Program and the "Implementation Plan for Polluted Runoff Control, 2000"; prepared by the Coastal Zone Management Program and the Department of Health, Polluted Runoff Control Program.)

1. Significant changes in BMPs;
2. Resource management plan approvals;
3. Land management plan adoptions, certifications or approvals;
4. Changes in agricultural activities regulated under State law;
5. Changes in mining activities regulated under State law; and
6. Construction and operation of roads, dams, etc., as regulated by State law.

Other Actions:

1. RCRA/CERCLA actions;
2. State Revolving Fund actions;
3. Other major federal actions pursuant to the National Environmental Policy Act (NEPA) and the Endangered Species Act (ESA);
4. Water quantity/water rights actions which affect water quality; and
5. Federal actions regulated by CWA §313.

ANTIDEGRADATION ANALYSIS:

Prior to proceeding with a detailed analysis of any of the actions listed above as needing antidegradation analysis, the affected water body must be assessed to determine its classification and uses, as described in H.A.R. 11-54-02 and 03, and the extent to which protected uses and water quality criteria are met. Adequate water quality standards must be adopted and approved for an affected water body pursuant to 40 CFR Part 131, Water Quality Standards, and the provisions in H.A.R. 11-54-01.1, General policy of water quality antidegradation must be satisfied prior to allowing any action to proceed which is likely to lower water quality

The first step in the antidegradation analysis to be conducted by HIDOH or the party proposing the action is to determine whether or not the proposed action will lower water quality. If the action will not lower water quality, no further analysis is needed and EPA considers 40 CFR 131.12 to be satisfied. If the action is likely to lower water quality, then the four basic tasks described below must be completed to ensure that actions affecting water quality are consistent with the provisions of 40 CFR 131.12.

Task A - Identify actions that require detailed water quality and economic impact analyses;

Task B - Prepare an analysis of whether or not lower water quality will fully protect the protected uses;

Task C - Prepare an analysis of whether or not lower water quality is necessary to

accommodate important economic or social development in the area in which the waters are located; and

Task D - Conduct an intergovernmental coordination and public participation process.

Task A - Identify actions that require detailed water quality and economic impact analyses:

This task defines the types of analyses required for all actions that lower water quality and the decision criteria that define the degree of water quality and economic analysis required. HIDOH procedures include three steps:

1. HIDOH will use ambient monitoring data to document the degree to which water quality exceeds that necessary to protect the uses. HIDOH will assure that, where little or no data exist, adequate information will be collected to assess the existing quality of the waters which could be adversely affected by the proposed action, and determine which water quality parameters and protected uses are likely to be affected. These assessments and determinations will be performed by HIDOH or by the party proposing the action in question.
2. HIDOH will quantify the extent to which water quality will be lowered as a result of the proposed action. If available and appropriate, methods developed for computing wasteload allocations or TMDLs may be used to provide this information.
3. HIDOH has defined the physical, chemical and biological water quality changes that warrant detailed water quality and economic impact analyses to include, but not be limited to, the likelihood of: (a) eutrophication; (b) bioassessment scores below those appropriate for the classification (perennial streams only); and (c) chronic violations of any of the narrative and numeric criteria compiled in H.A.R. Chapter 11-54, Water Quality Standards.

Multiple small changes in water quality over time in a location, such as those resulting from actions which do not require detailed analyses, can result in significant water quality degradation. To prevent these cumulative adverse impacts, a water quality baseline must be established for each potentially affected water body prior to allowing any action which would lower the quality of that water. The baseline will remain fixed until one or more actions improve water quality, at which time the baseline will be adjusted to reflect the improved water quality.

Proposed actions to lower water quality will be evaluated with respect to the baseline and the magnitude of the expected water quality change estimated. This estimate will include the cumulative impacts of all previous and proposed actions and reasonable foreseeable actions which would lower water quality below the established baseline. If the cumulative impact of actions is likely to significantly degrade water quality, then more detailed water quality and economic impact analyses are necessary.

It is important to note that State water quality criteria are set on the basis of the water quality expected in the absence of significant human-caused sources of pollution. If a water quality baseline assessment for a potentially affected water body shows that water quality is below that expected for the water body type, then HIDOH will evaluate the water quality monitoring protocol for adequate space/time coverage of the waters in

question, and also determine if the water quality is degraded enough to warrant listing on the CWA §303(d) List of Water Quality-Limited Segments.

If water quality is likely to be significantly lowered by a proposed action, the State must find that the action is necessary to accommodate important economic and social development. Such a finding must include at least these elements:

1. The action will result in economic and social development, measured by new or increased production of goods or services by the proposing party, increasing population in the service area of a new or expanded sewage treatment plant, etc.;
2. Lowering of water quality by the economic or social development cannot reasonably be mitigated.
3. The lower water quality will not result from inadequate wastewater treatment facilities, less than optimal operation of adequate treatment facilities, or failure to implement or comply with methodologies to reduce or eliminate polluted runoff.

Task B - Prepare an analysis of whether or not lower water quality will fully protect the existing uses:

All actions that could lower water quality require a determination that existing uses will be fully maintained and protected. However, in most cases water quality standards established to protect water uses are established on a statewide or area-wide basis and may not adequately protect the biota or the uses established for specific waters. Consequently, comparing existing or projected water quality with adopted standards may not adequately define whether or not beneficial uses will be fully maintained and protected. Additional investigations needed for making this decision should be undertaken through HIDOH's water quality monitoring program and CWA §303(d) program (preparation of biennial List of Impaired Waters and computation of TMDLs for all listed waters).

Water quality must meet applicable public health standards as well as protect aquatic ecosystems. The water quality criteria guidance developed by EPA per CWA §304(a) provides a basis for this assessment. However, criteria for toxic substances may not fully protect locally occurring species in Hawaii that may not have been tested, or that have been tested but require greater protection than the criteria provide. If the species resident in the water body where water quality may be lowered by the presence of potentially toxic substances are not adequately represented in the database, additional biological testing should be completed before lower water quality is allowed. Prior to authorizing lower water quality, human health and/or ecological risk assessments should also be prepared for expected pollutants which have high bioaccumulative potential or have been identified as carcinogens

For parameters for which no criteria guidance documents have been developed, biological testing or acceptable site-specific criteria may be used to determine that lower water quality will fully maintain and protect the protected uses.

Methodologies useful for determining if existing and protected uses are being maintained include, but are not limited to, biological assessments or ambient toxicity testing using

standardized species. EPA's acute and chronic toxicity methodologies for assessing the toxicity of effluents or receiving waters may also be employed as needed.

Task C - Prepare an analysis of whether or not lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located:

Actions which will significantly lower water quality, as determined in Task A, require a determination that such actions are necessary for important economic or social development. 40 CFR §131.12(a)(2) and the "Questions and Answers on Antidegradation" (designated as Appendix G to Chapter 4 - Antidegradation, of EPA's August 1994 Water Quality Standards Handbook, Second Edition) provide general guidance on how to make this determination. More specific criteria are provided in EPA's "Interim Economic Guidance for Water Quality Standards; Workbook" Section 1.5, Antidegradation. (Appendix M to the Water Quality Standards Handbook - Second Edition; EPA -823-B-95-002 March, 1995).

The fundamental requirement of this task is to establish a strong tie between the proposed lower water quality level and "important" economic or social development. If the party seeking reduction in water quality cannot demonstrate the relationship between such development and water quality, then the proposed action is prohibited.

Demonstration of important economic or social development encompasses two steps. First, in order to provide a baseline for comparison, the proposing party must describe and analyze the current state of economic and social development in the potentially affected area. Use or dependence by the population on the water resource affected by the proposed action should be described in the analysis, along with an analysis of downstream impacts of reduced water quality. At least five factors should be included in the baseline analysis:

- Population;
- Area employment (numbers employed, earnings, major employers);
- Area income (earnings from employment and transfer payments, if known);
- Manufacturing or other industry profile (including tourism): types, value, employment, trends;
- Government fiscal base: revenues by source (employment and sales taxes, etc.)

Second, the party seeking reduction in water quality must then demonstrate the extent to which such reduction would create an incremental increase in the rate of economic or social development and why the change in water quality is necessary to achieve such development. The party must provide both the data collected and an analysis showing the extent to which the factors listed above would benefit from the reduction in water quality requested. Alternative economic and social options, or measures which would mitigate reductions in water quality must be identified in this analysis. The relative costs of various alternatives to the proposed action should also be analyzed, and treatment costs necessary to maintain existing water quality estimated.

At least these four factors should be included in an analysis of incremental effects expected to result from the proposed reduction in water quality:

- Expected business expansion;
- Employment growth;
- Direct and indirect effects on income; and
- Increases in the community tax base.

Task D - Conduct an intergovernmental coordination and public participation process:

Public notification pursuant to 40 CFR 131.12 is required for all actions that lower water quality. EPA requires that proposed actions which degrade water quality be reviewed by other appropriate agencies and that the public be given an opportunity to comment. The public participation requirement should be met by issuing both a public notice for a 30-day comment period and a press release describing the proposed action, then holding a public information meeting in the affected county. The requirement may also be met by combining public notification and a meeting with a public hearing on an NPDES permit for the activity.

Intergovernmental coordination will consist of written requests from HIDOH to affected federal, state, and county agencies asking for reviews of proposed actions likely to lower water quality.

Public notification items required to comply with antidegradation policy and regulations:

- A description of the State's antidegradation policy and a statement that the proposed action complies with that policy;
- A finding that existing uses will be maintained and protected.. This step requires an assessment followed by preparation of documentation for public review of: (a) the amount by which current water quality exceeds that necessary to protect existing and protected uses; and (b) the amount by which water quality will be lowered as a result of the proposed action (see Task A);
- A summary of prior actions, if any, that have lowered water quality and an evaluation of any cumulative impacts;
- A determination that lower water quality is necessary to accommodate important economic or social development. A detailed analysis is required (see Tasks A and C);
- A description of the intergovernmental coordination process covering this action; and
- A determination that the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for polluted runoff have been achieved.

OTHER CONSIDERATIONS:

1. The decision criteria for determining that detailed water quality, social, and economic analyses are needed may vary with the types of chemical pollutants associated with the proposed activity. Some chemicals are believed to elicit an effect at a certain concentration (i.e., threshold chemicals). Other chemicals (i.e., non-threshold chemicals) have no safe level. Non-threshold chemicals include

carcinogens, mutagens and teratogens. HIDOH will apply more stringent review procedures to evaluations of non-threshold chemicals.

2. NPDES permits do not routinely contain numerical limits for all of the substances found in a discharger's effluent. Nevertheless, all substances are subject to antidegradation policy implementation, whether or not they are specifically limited in the permit. To apply antidegradation to substances not currently listed in the permit, HIDOH can utilize the notification procedures specified in 40 CFR 122.42, requiring dischargers to notify the state pollution control agency of any actual or anticipated change in effluent characteristics, as compared with those existing at the time the permit was issued.